

# Use of R-GMA in BOSS

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Some slides stolen from various talks at EDG 2<sup>nd</sup> Review

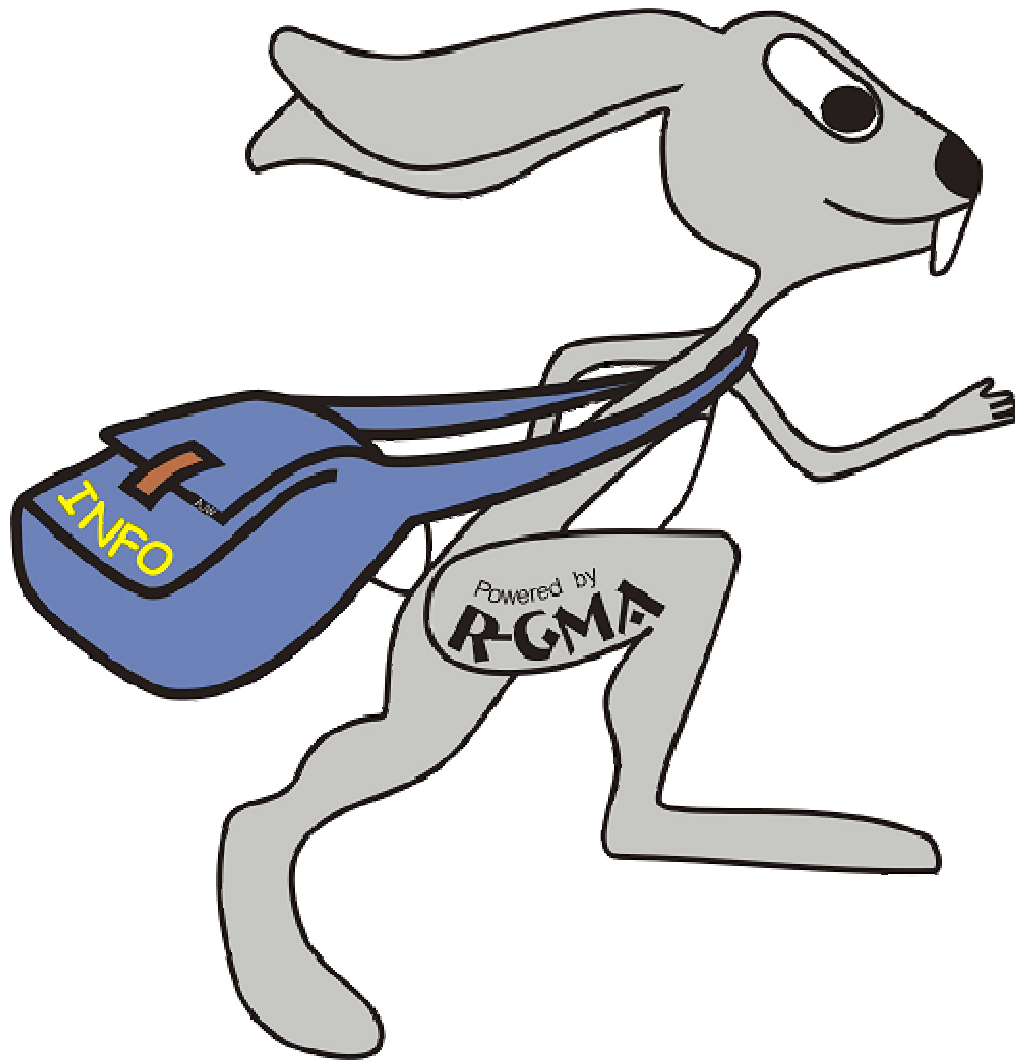
(<http://documents.cern.ch/AGE/current/fullAgenda.php?ida=a021814>)

WP3 overview at GridPP middleware mtg. (???),

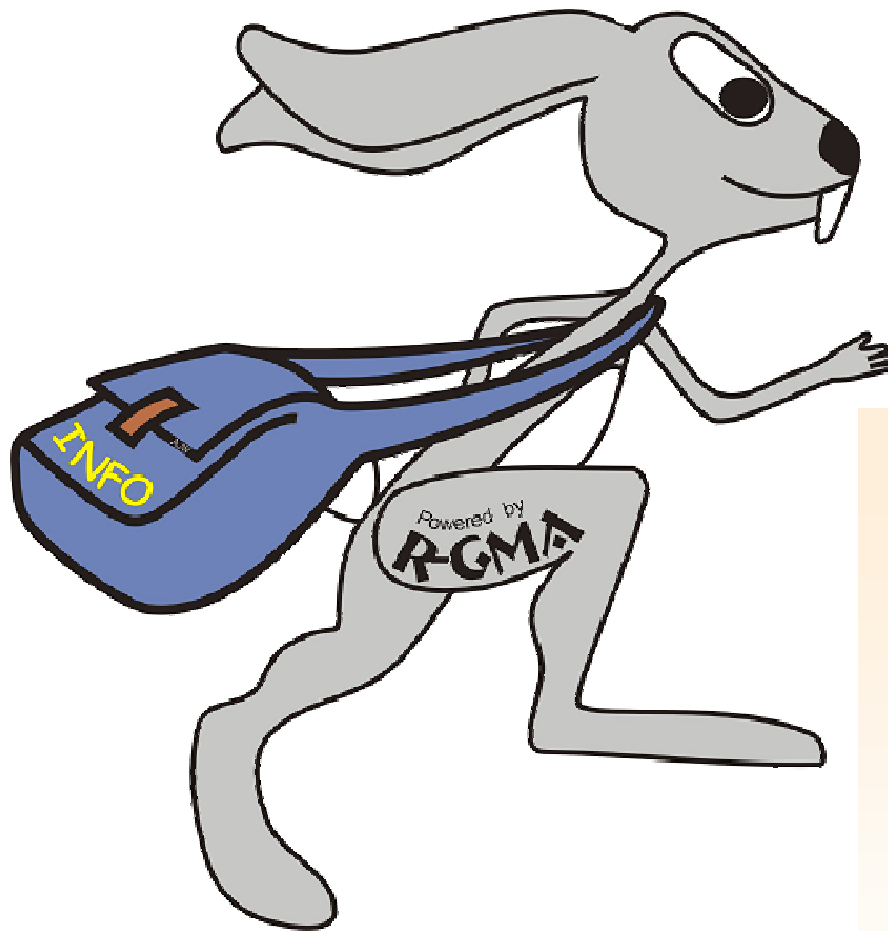
WP1-WP7, CERN, 18th June 2002

(<http://documents.cern.ch/AGE/current/fullAgenda.php?ida=a02943>)

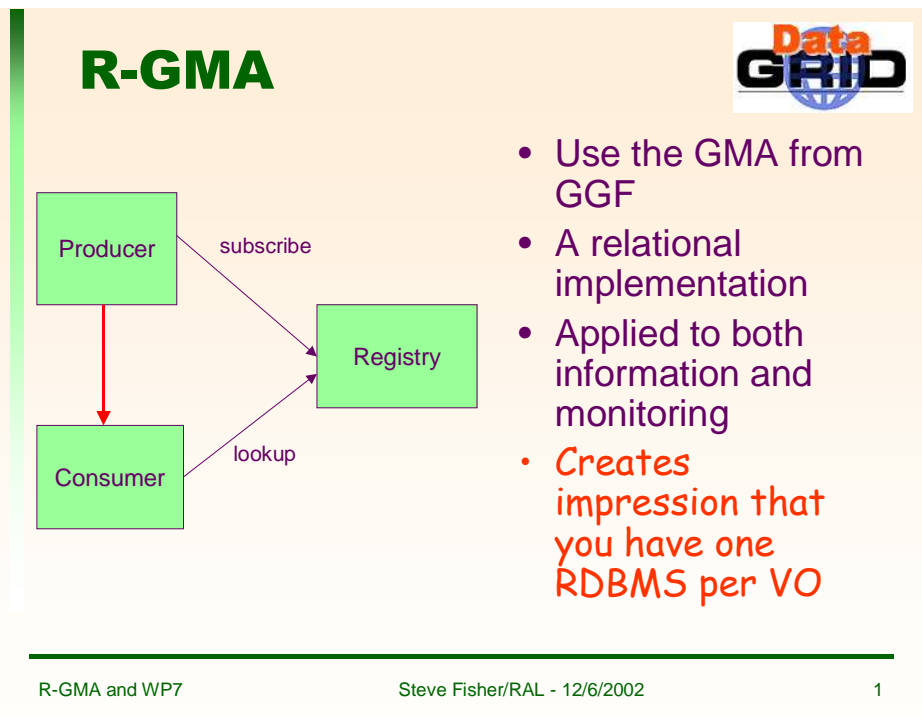
# R-GMA



- Grid monitoring infrastructure
- Based on GGF GMA
- Discrete consumers and producers
- Registry acts as matchmaker

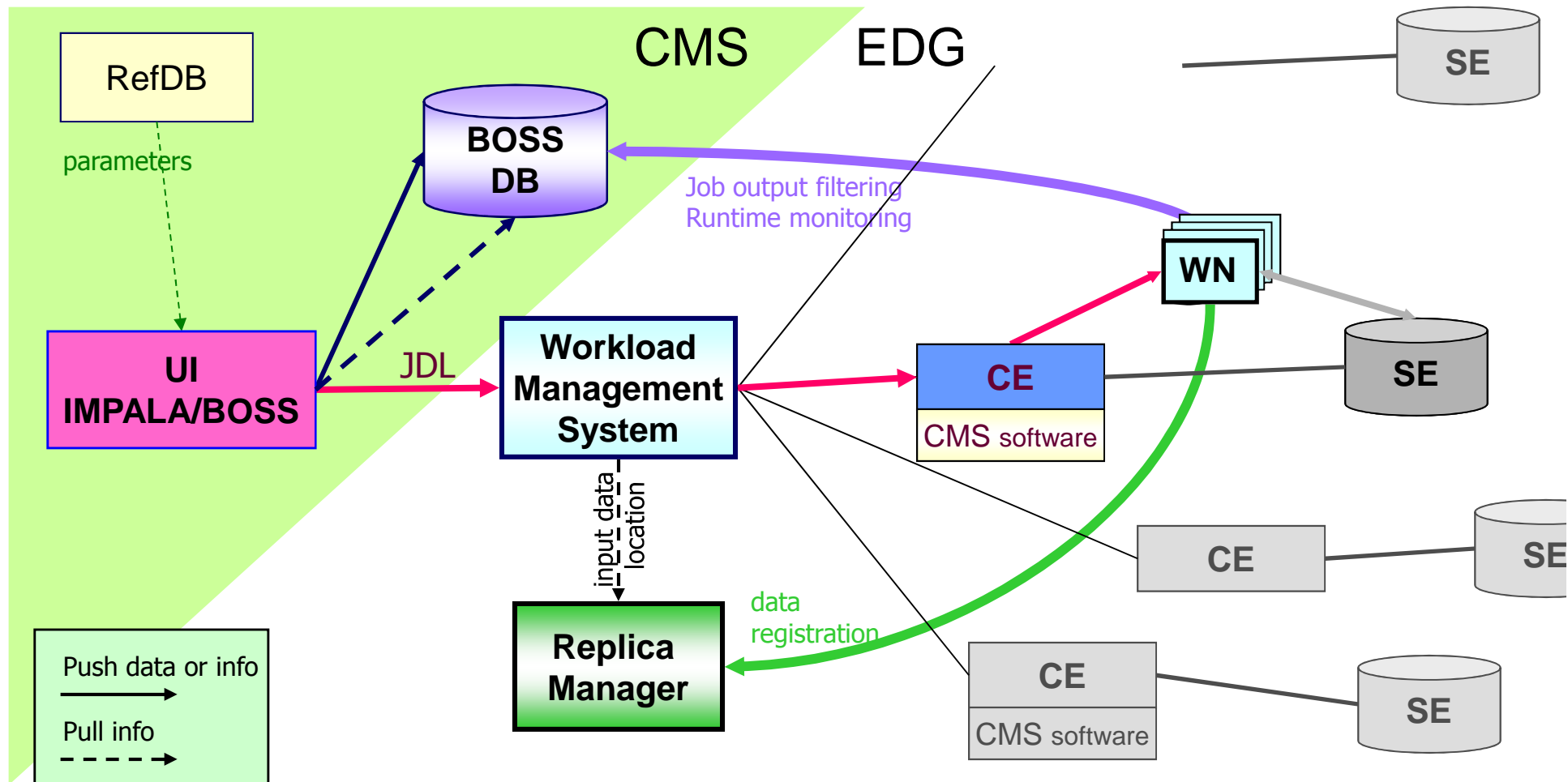


# R-GMA

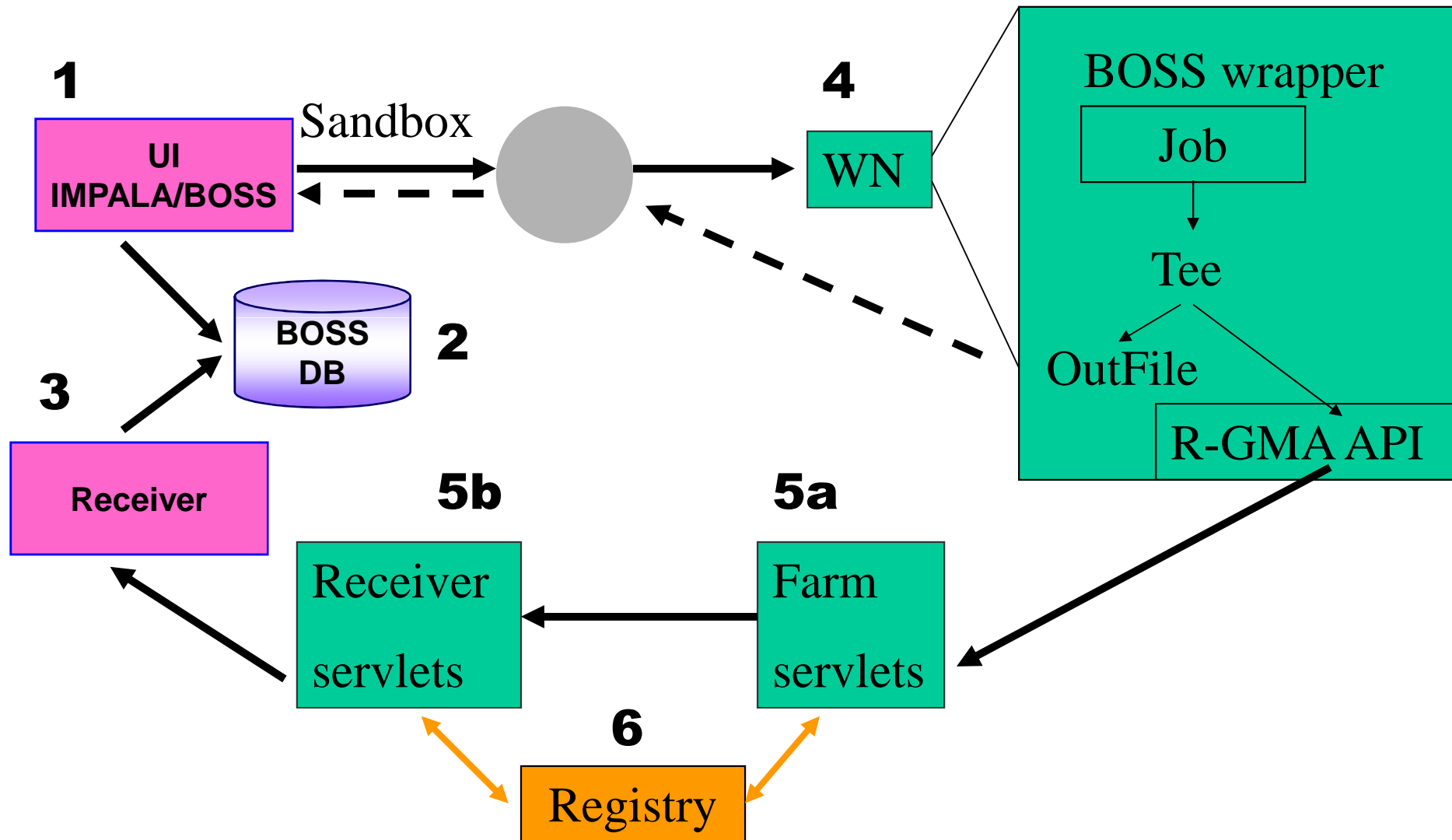


More on R-GMA see e.g. “**RGMA deployment**” at  
[http://www.gridpp.ac.uk/gridpp7/gridpp7\\_fisher.ppt](http://www.gridpp.ac.uk/gridpp7/gridpp7_fisher.ppt)

# BOSS



# Use of R-GMA in BOSS



# Use of R-GMA in BOSS

- Publish each update into R-GMA as a separate message – separate row
- Each producer gives host and name of “home” BOSS DB, and jobId; this identifies it uniquely
- Receiver looks for all rows relating to its DB; uses jobId and jobType to do SQL **UPDATE**

# Use of R-GMA in BOSS

The screenshot below shows the streamed output messages from a Brunel job (ID 112) being sent through R-GMA and displayed using the EDG Pulse tool from WP3. As Pulse can monitor multiple producers, it also shows the output from a longer job already running at Imperial (ID 72).

The receivers that update the BOSS databases use the bossDatabaseHost and bossDatabaseName fields to select only the relevant messages, so that the database at each institute is updated with only the information about its own jobs.

<http://www.brunel.ac.uk/~eestprh/GRIDPP/Index.htm>

| SELECT * FROM bossJobExOutMessage |                    |             |               |               |   |             |
|-----------------------------------|--------------------|-------------|---------------|---------------|---|-------------|
| bossDatabaseHost[]                | bossDatabaseName[] | bossJobId[] | bossJobtype[] | bossVarName[] | bossVarValue[]  | timeStamp[] |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | comment       | I_am_fully_operational_and_all_my_circuits_are_functioning_perfectly. | 1043425943  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | majorcount    | 204   | 1043425943  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | tick          | 15  | 1043425943  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | JOB           | E_HOST        | young   | 1043426585  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | JOB           | E_PATH        | /home/boss/boss-v3_3_pre5/CounterDemo                                 | 1043426585  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | JOB           | E_USR         | eesrjijn  | 1043426585  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | JOB           | T_START       | 1043426579  | 1043426585  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | counterdemo   | comment       | START...  | 1043426585  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | counterdemo   | majorcount    | 0   | 1043426585  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | comment       | Message_7:_This_is_message_number_7._Message_7_ends.                  | 1043425948  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | majorcount    | 207   | 1043425948  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | tick          | 6   | 1043425949  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | counterdemo   | majorcount    | 0   | 1043426590  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | counterdemo   | tick          | 1   | 1043426590  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | comment       | Brain_the_size_of_a_planet_and_he_has_me_count_to_twenty!_Bah.        | 1043425954  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | majorcount    | 209   | 1043425954  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | tick          | 17  | 1043425954  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | counterdemo   | comment       | I'm_sorry_Dave,_I'm_afraid_I_can't_do_that.                           | 1043426595  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | counterdemo   | majorcount    | 2   | 1043426595  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | counterdemo   | tick          | 13  | 1043426595  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | comment       | There's_a_pain_in_the_diodes_all_the_way_up_my_left_side.             | 1043425959  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | majorcount    | 212   | 1043425959  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | tick          | 8   | 1043425959  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | JOB           | RET_CODE      | 0   | 1043426600  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | JOB           | T_STAT        | 0.07s user 0.01s sys  | 1043426600  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | JOB           | T_STOP        | 1043426600  | 1043426600  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | counterdemo   | comment       | That's_all,_folks!  | 1043426600  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | counterdemo   | majorcount    | 5   | 1043426600  |
| young.brunel.ac.uk:0              | boss_v3_3_young    | 112         | counterdemo   | tick          | 20  | 1043426600  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | majorcount    | 214   | 1043425964  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | tick          | 19  | 1043425964  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | majorcount    | 217   | 1043425969  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | tick          | 9   | 1043425969  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | comment       | I'm_sorry_Dave,_I'm_afraid_I_can't_do_that.                           | 1043425974  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | majorcount    | 220   | 1043425974  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | tick          | 20  | 1043425974  |
| gw30.hep.ph.ic.ac.uk:0            | boss_v3_3          | 72          | counterdemo   | majorcount    | 222   | 1043425979  |



# Use of R-GMA in BOSS (1)

- R-GMA smoothes “firewall” issues
- Consumer can watch many producers; producers can feed multiple consumers.
- Provides uniform access to range of monitoring data (WP7 network, etc.)
- Doesn't depend on other EDG components

## Use of R-GMA in BOSS (2)

- BOSS job wrapper uses an R-GMA StreamProducer and C++ API
  - Can define minimum retention period
  - No guarantees
- BOSS receiver implemented in Java
- Currently use R-GMA 3.1.39

# R-GMA

- Scalability not proven
  - GK a bottleneck?
  - Need separate CMS-specific R-GMA infrastructure?

# R-GMA

- WP3 large-scale testing:
  - “The Archiver the Boss job streams to can support 980 Stream Producers. The Stream Producer Servlet can support 420 Stream Producers. This means that you could not submit more than 420 Boss jobs to one site, if they had enough nodes to run all these on simultaneously. You could also not submit more than 980 Boss jobs across more than one site if you were using a single Archiver. Our Performance Analysis will hopefully improve these numbers.” *L. Field*

# Use of R-GMA in BOSS

- Augments BOSS journal files for real-time monitoring
- Need for large-scale testing now
- What are criteria for success ?
- How to deploy out there?

# Deployment

- **1UI 2DB 3RCVR** usually on same box? What instructions are needed?
- **4 WN**: have set of manual instructions that shouldn't clash with normal operation. LCFG?
- **5a 5b** are effectively EDG “MON” boxes. May only need one per site. Might need 8080 open inbound.
- **6 Registry**: do we use std. WP3 one or our own – this would flummox other R-GMA users e.g. WP7

<http://www.brunel.ac.uk/~eesrjjn/grid/grid.htm>